

*SOCIAL ANTECEDENTS OF CHILDREN'S EYEWITNESS
TESTIMONY: A SINGLE-SUBJECT
EXPERIMENTAL ANALYSIS*

KARLA J. DOEPKE

ILLINOIS STATE UNIVERSITY

ANGELA L. HENDERSON

AUBURN UNIVERSITY

AND

THOMAS S. CRITCHFIELD

ILLINOIS STATE UNIVERSITY

In a laboratory simulation, a single-subject design was used to examine the effects of two types of social influence on children's eyewitness testimony, which has not been the subject of systematic behavioral analyses. This study replicates and extends findings from group-comparison studies, and shows that a topic of pressing social importance is amenable to analysis at the individual level, and therefore, potentially, to a behavioral analysis.

DESCRIPTORS: eyewitness testimony, children, single-subject design, verbal reports

Scientific translation often proceeds from basic research toward applied research and practice, but a reverse propagation, in which everyday concerns are addressed with ever more exacting scientific methods, is of equal value (Mace, 1994). Children's eyewitness testimony is central to police investigations, courtroom process, and therapeutic interviews. Not surprisingly, it has been studied extensively (Ceci & Bruck, 1995), but mainly through group-statistical methods and rarely (if ever) from a behavior-analytic perspective. The two problems are intertwined: Unless eyewitness testimony can be examined rigorously as an *individual* phenomenon—something for which the literature offers little precedent—a complete analysis of its functional properties is unlikely to

emerge. Some well-documented case demonstrations exist (e.g., see Loftus, 1997) but do not substitute for experimental analyses. Here we begin the process of instantiating a behavioral analysis of eyewitness testimony by exploring whether this compelling topic can be studied within the context of a single-subject experimental design.

As a first step in translation, we employed independent variables suggested by traditional research on eyewitness testimony. Testimony can vary with its immediate antecedents (Ceci & Bruck, 1995), but the practicalities of group designs often mitigate against the study of repeated exposure to these factors, such as might occur in a series of police interrogations (Zaragoza, Graham, Hall, Hirschman, & Ben-Porath, 1995). Single-subject designs are ideally suited to this type of analysis, particularly if the effects under investigation are reversible, and children's testimony is thought to be especially sensitive to situational factors (Ceci & Bruck, 1995; Perry & Wrightsman, 1991).

These data were part of an Auburn University master's thesis conducted by Angela Henderson under the supervision of Karla Doepke.

Direct correspondence to Karla Doepke, Department of Psychology, Illinois State University, Normal, Illinois 61790 (e-mail: kdoepke@ilstu.edu).

Within each condition of the present study, the questions used to occasion testimony were either in propositional form (suggesting an “expected” answer) or in nonpropositional form. The effect of these questions on testimony was examined over repeated interviews to examine possible immediate antecedent influences.

Little is known about the effects of more diffuse forms of social influence on children’s testimony. For instance, the perpetrators of sexual abuse are often known to the child’s family, and the contents of child testimony could vary depending on whether family members have previously reacted in favorable or unfavorable ways to the suspect (Perry & Wrightsman, 1991). This type of social induction was manipulated across conditions of the present study to examine more closely the influence of more distal antecedent control.

The procedure employed a staged situation about which children were later asked to answer questions. Because of practical and ethical considerations, simulations of this type are the most common approach to the experimental study of child testimony (Ceci & Bruck, 1995).

METHOD

Participants were 5-year-old African-American children (3 girls and 1 boy) who scored within typical ranges on standardized assessments of general intellectual ability, receptive language, and emotional and behavioral functioning. Details of the informed consent and debriefing procedures are available from the first author. The experiment took place in a room equipped with items for a simulated health check (scale, tongue depressors, stethoscope, and tape measure) plus a few toys, and in a nearby interview room containing three chairs and a table. Both rooms had a one-way observation win-

dow through which procedural integrity checks were conducted.

Each experimental condition began with a 10-min scripted, simulated health check during which a confederate weighed the child, listened to a stethoscope placed on the child’s back, measured the child (waist, arm, back, and height) with a tape measure, and placed a tongue depressor in the child’s open mouth. Next, a brief open-ended interview conducted by a different confederate to verify that the child initially knew what had happened in the health check was followed by 15 min of free play and the social induction procedure (below); these defined experimental conditions. The first visit concluded with an interview containing 40 questions about events in the health check that could be answered in a single word (usually yes or no). The interviewer was blind to the events of the health check and to social induction manipulations, and was trained to provide no evaluative feedback about the children’s answers. The child’s parent sat behind the child during interviews but was asked to remain silent.

On subsequent laboratory visits (2 to 3 days apart), the 40-question interview was repeated 11 times by the same interviewer as on the first visit, with two interviews per visit separated by a 20-min play period. Interviews included 20 questions in propositional form mixed randomly with 20 in nonpropositional form (see Table 1 for examples), with question order constant across interviews and children. Interrater reliability was 100% across all interviews (comparing live data collection with that of a second rater who listened to session audiotapes).

Social induction took place away from the interviewer and health checker, according to a script provided to the child’s parent, in an A-B-C-B design, with A being no induction, B being positive induction (the parent stated, “I like the way [health checker] looked at you. You had fun, didn’t you? I think I

Table 1
Examples of Interview Questions

Propositional questions
You saw [health checker] write something down, didn't you?
You got weighed, didn't you?
Didn't somebody hurt you in the room?
[Health checker] gave you candy, didn't she?
Nonpropositional questions
Did [health checker] touch you?
Did [health checker] measure you with the tape?
Did you get a shot?
Did [health checker] tell you to leave the toys alone?

know her. She is a good woman.”), and C being negative induction (parent stated, “I do not like the way [health checker] looked at you. Are you okay? I think I know her. She is a bad woman. I am glad you are done with her.”). Three different confederates (1, 2, and 3), all of whom were blind to the social induction manipulations, completed the health checks. Within the A-B-C-B design, the order of health checkers was 1-2-3-2 for Rosa and Frederick, 2-3-1-3 for Octavia, and 3-1-2-1 for Wilma. Thus, any between-subject generality of social induction effects could not result from confounding health checkers and conditions.

RESULTS AND DISCUSSION

Within conditions, accuracy of the children's answers declined across interviews (Figure 1). Few previous studies have included the multiple interviews that legal proceedings often incorporate (Zaragoza et al., 1995). As shown in several group-design studies (e.g., Perry & Wrightsman, 1991), propositional questions tended to be answered less accurately than nonpropositional ones (Figure 1, left). Propositional-item accuracy was lower in 48, 37, 44, and 44 of the 48 interviews for Rosa, Octavia, Wilma, and Frederick, respectively; and in 41, 36, 48, and 46 of the 48 interviews for the con-

trol, Positive 1, negative, and Positive 2 conditions, respectively. In all cases, $\chi^2 \geq 12$, $p \leq .001$.

Considering all interview questions combined, social induction decreased accuracy compared to the no-induction control condition (Figure 1, right). This outcome broadly replicates findings from group-comparison studies (Perry & Wrightsman, 1991) but is novel in comparing the effects of negative and positive induction, only the former of which has been studied previously. Negative induction impaired accuracy more than positive induction (Figure 1, left), a difference that may be more than a matter of degree. Under positive induction, children were provided with postevent information that was consistent with the child's (generally pleasant) experience of the confederate, but the same was not true under negative induction. It has been suggested that the parent's critical statements about a person in whose care the child was recently placed elicits emotional responses that can interfere with recall (e.g., Zaragoza et al., 1995). The relatively high incidence of “I don't know” responses under negative induction (Table 2) may be consistent with this view.

This preliminary study of children's eyewitness testimony suggests that it is not necessary to rely on group-comparison designs or nonexperimental case demonstrations to investigate a topic of pressing social importance. Studying testimony at the level of the individual by utilizing single-subject experimental designs is the first step toward launching a behavioral analysis to explore the utility of behavior theory in understanding eyewitness testimony. Good theory should make unique, testable predictions, and thus it is essential to go beyond post hoc interpretations of selected findings. For instance, perhaps propositional questions impair response accuracy because they both present information (“You got weighed . . .”) and suggest an acceptable response (“. . .

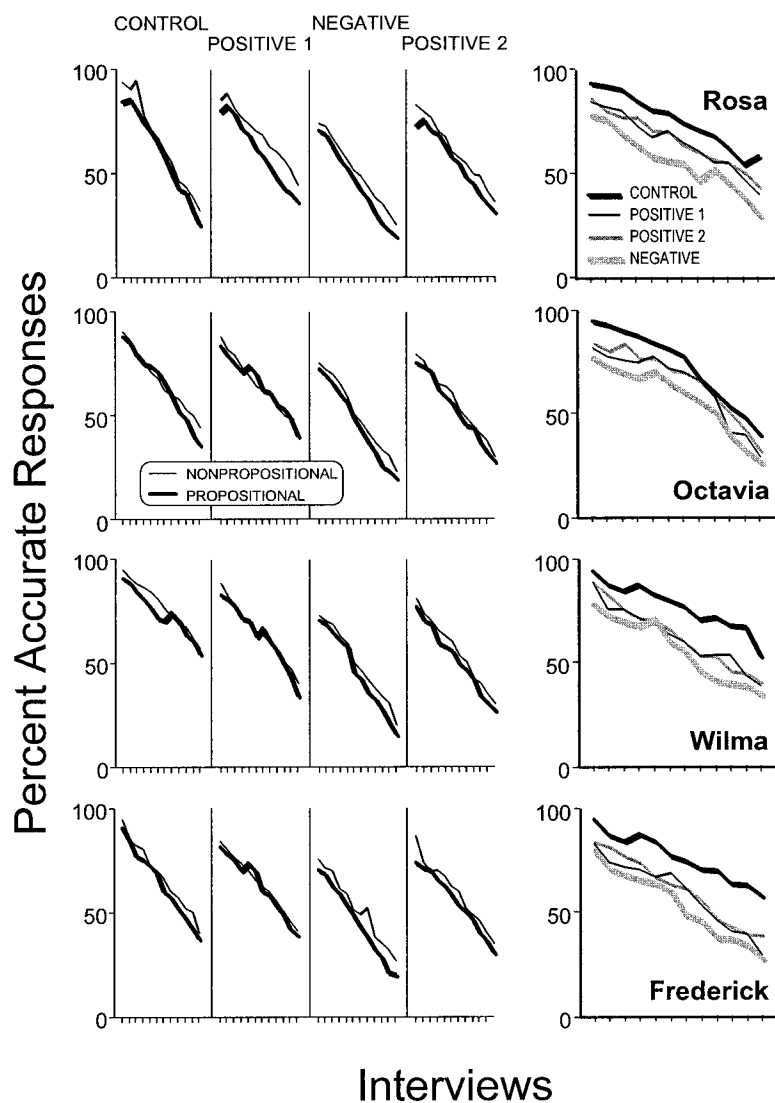


Figure 1. Left: percentage of accurate interview responses in each of the four experimental conditions. Right: percentage of accurate responses to propositional and nonpropositional questions.

Table 2
Mean Number of "I Don't Know" Answers per Interview for Each Experimental Condition

Child	Control		Positive 1		Negative		Positive 2	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Rosa	2.4	0.7	4.5	0.9	6.1	0.8	4.3	0.6
Octavia	2.8	0.9	4.3	1.1	5.5	1.0	4.3	1.0
Wilma	2.5	0.7	3.9	0.9	6.5	1.5	4.6	0.5
Frederick	2.8	1.3	3.6	1.0	7.0	1.1	4.1	1.2

Note. Across subjects, there were no systematic changes in frequency of "I don't know" responses across interviews within a condition.

didn't you?"), thereby mimicking the typical form of both tacts and mands.¹ Skinner's (1957) analysis of verbal behavior enumerates the complex forms of control exerted by hybrid verbal stimuli, and interview responses occasioned in this way should differ from those controlled exclusively by events that are the focus of an interrogation. It remains to be seen, however, whether an account based on Skinner will yield predictions that distinguish it, empirically and heuristically, from competing accounts.

Good theory also accounts for existing data. For decades, researchers outside behavior analysis have studied contextual influences on eyewitness testimony, including social pressures (from parents, court personnel, therapists, and perpetrators), phrasing and timing of interview questions, physical features of the interview environment, and child characteristics such as developmental level, emotional state, and communication skills (e.g., Ceci & Bruck, 1995). To be credible, a behavioral approach to eyewitness testimony research must fully account for these findings.

Whenever they have been applied systematically, the methods and theories of behavior analysis have proven to be valuable in

revealing functional properties of behavior and, often, inspiring effective interventions. When tackling topics that have been the province of other researchers, behavior analysts face a prodigious challenge, but one that must be met for behavior analysis to contribute to the greater good and function as a general-purpose science of behavior. Pending further elaboration of behavior theory specific to eyewitness testimony, there is much appeal in the inductive research approach that has served behavior analysis well in other domains (e.g., Skinner, 1956). Data drive theory. By placing an unfamiliar topic in a familiar methodological context, the present study illustrates a means by which behavior theorists can be shaped by relevant data.

REFERENCES

- Ceci, S., & Bruck, B. (1995). *Jeopardy in the courtroom: A scientific analysis of children's testimony*. Washington, DC: American Psychological Association.
- Loftus, E. F. (1997). Creating childhood memories. *Applied Cognitive Psychology*, 11, S75-S86.
- Mace, F. C. (1994). Basic research needed for stimulating the development of behavioral technologies. *Journal of the Experimental Analysis of Behavior*, 61, 529-550.
- Perry, N., & Wrightsman, L. (1991). *The child witness*. London: Sage.
- Skinner, B. F. (1956). A case history in scientific method. *American Psychologist*, 11, 221-233.
- Skinner, B. F. (1957). *Verbal behavior*. New York: Appleton-Century-Crofts.
- Zaragoza, M. S., Graham, J. R., Hall, G. C. N., Hirschman, R., & Ben-Porath, Y. S. (Eds.). (1995). *Memory and testimony in the child witness*. Thousand Oaks, CA: Sage.

Received June 9, 2003

Final acceptance September 25, 2003

Action Editor, Patrick Friman

¹ Note that, compared to open-ended queries (e.g., "Tell me what happened during the health check."), both types of questions used in this study could be considered leading questions, because both identified specific events that might have occurred (see Table 1). Loftus (1997) has argued that this kind of imbedded information can exert strong stimulus control over responses. In the present study, for example, when asked "Did [health checker] give you candy?" all participants regularly said "yes," even though no candy was given.